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THE
PHYTOLOGIST.

A BOTANICAL JOURNAL.

Ὡς ἐμεγαλύνθη τὰ ἔργα σου, Κύριε!—πάντα ἐν σοφίᾳ ἐποίησας.
Psalm. ciii. 24.

Benedicite universa germinantia in terra Domino; laudate et superexaltate Eum in saecula.—*Hymn. iii Pueror.* v. 76.

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WILLIAM PAMPLIN, 45, Frith Street, Soho Square.

BOTANY OF HUMPHREY HEAD.

By C. J. Ashfield.

Having often heard of the botanical treasures of Humphrey Head, a bold promontory of limestone jutting out into the Bay of Morecambe, near the crossing-place over Lancaster Sands, and having read Whitaker's and several other interesting description of Cartmel and its fine old church, a friend of mine and myself during this present month of July resolved upon taking a trip to those places. As we were successful in our botanical researches, it occurred to me that an account of the latter might not be unacceptable to the readers of the 'Phytologist.' We reached Cark station between eight and nine; and as the weather appeared to be rather doubtful, we determined to get through the botanical portion of our programme in the early part of the day, leaving our antiquarian investigations until the afternoon. On our arrival at Cark, therefore, we inquired our way to Humphrey Head, and of the two roads which were mentioned to us, we took the one (though considerably the longer of the two) by the coast, expecting to meet with some seaside plants. We found none, however, except a few of the common species, such as *Statice Armeria, Plantago maritima*, etc. After walking a few miles we came to some romantic sea-worn rocks of some twelve or fifteen feet elevation, which were beautifully festooned and crowned with plants of various kinds, such as *Helianthemum vulgare, Centaurea Scabiosa, Campanula rotundifolia*, etc. A very short distance from these rocks brought us to the western side of Humphrey Head. The side of the hill facing us was very precipitous, and of considerable elevation, and among a great variety of trees and shrubs which clothed it, we saw a great number of fine specimens of *Taxus baccata* (these apparently truly wild), which formed a striking contrast to the silvery leaves of the *Pyrus Aria* with which it was occasionally intermingled. We ascended the hill at its northern end, at which point it can be climbed without difficulty, and made our way along the top at its western edge. We soon spied out *Helianthemum canum* in great quantities, a good many specimens of *Spiræa Filipendula*, plenty of *Thymus Acinos*, here and there some plants of *Geranium sanguineum* and *Juniperus communis*,

BRITISH MUSEUM

lots of *Rosa spinosissima*, and near the southern end of the hill a considerable quantity of *Veronica spicata*, var. *hybrida*. This last-named plant grew on ledges on the face of the hill, in several instances in inaccessible places. We returned along the eastern side of the hill, which is considerably more sloping than the other, and much more bare of vegetation. We observed *Glaucium luteum*, *Sedum Telephium*, and *Silene maritima* between the foot of the hill and high-water mark. In due time we arrived at the point where we commenced our ascent; and having had a very early breakfast before leaving Preston, we resolved to take as direct a path as possible to the Cavendish Arms at Cartmel, and order dinner.

Before, however, taking our final leave of Humphrey Head, we should mention that we found the following among many other common species of plants dispersed about the hill:—*Clinopodium vulgare, Carlina vulgaris, Thymus Serpyllum, Asplenium Adiantum-nigrum, Helianthemum vulgare, Anthyllis Vulneraria, Solidago Virgaurea, Malva moschata, Erica cinerea*. We did not find *Hypochœris maculata*, which is said to grow on Humphrey Head, and we were unable to examine a portion of the lower part of the western side of the promontory, owing to the state of the tide. A very pleasant walk of three miles through rural shady lanes redolent of woodbines, newly mown hay, etc., brought us to Cartmel. Our anxiety to realize our anticipations of dinner did not however prevent our botanizing upon our way, or turning a short distance out of it for the purpose of inspecting Wraysholme Tower, an ancient "fortified house of a junior branch of the Harringtons of Aldingham in the fourteenth century, but now degraded into a cowhouse," which lay a little to the right of the road. On the top of the Tower we saw a quantity of *Parietaria officinalis*, and on the walls adjacent we found *Saxifraga tridactylites* and *Asplenium Ruta-muraria*. An old wall by the wayside, between Humphrey Head and Cartmel, was literally covered with luxuriant specimens of *Sedum acre, Asplenium Trichomanes*, and *Polypodium vulgare*. The hedges abounded with *Tamus communis*, interspersed occasionally with *Ligustrum vulgare* and *Lonicera Periclymenum*. In the ditches were large quantities of *Agrimonia Eupatoria, Œnanthe crocata, Valeriana officinalis, Sium nodiflorum*, and occasional specimens of *Lythrum Salicaria, Sparganium ramosum* and *simplex*. In one place we saw several plants of *Hippuris vulgaris*, and in another a large patch or two of *Anagallis tenella*. On the hedge-banks we not unfrequently met with *Lysimachia vulgaris, Geranium lucidum*, and *Scolopendrium vulgare*; the last being in its normal form and two or three of its varieties.

On the banks in the village of Allithwaite we saw *Verbena officinalis, Malva sylvestris, moschata*, and *rotundifolia. Campanula latifolia* made its appearance in one place near Cartmel, and *Chenopodium Bonus-Henricus* flourished by the side of the churchyard wall in that town. Our botanical researches finished here, and as we were within a few yards of our hostelry, we very shortly sat down to dinner; and, as it may be imagined, did full justice to the good things which were set before us. After dinner we sallied forth to inspect the fine old conventual church of Cartmel; but a description of this, however agreeable it might be to the individual tastes of many of the readers of the 'Phytologist,' would be out of place in the pages of that work. Suffice it to say that we returned to Preston in the evening, thoroughly pleased with our jaunt, and only puzzled to decide whether our botanical, or antiquarian and architectural tastes had received the most gratification. One word should be said for the scenery, which possessed all the charms that mountain and valley, wood and water could bestow upon it.

VISIT TO HUMPHREY HEAD, ETC.

By JOHN WINDSOR, M.D., F.L.S.

Leaving Manchester by rail on the afternoon of June 20, 1861, on a short visit to some relatives in the neighbourhood of Morecambe Bay, I reached Flarkburgh, in Cartmel, the same evening.

On the following morning, accompanied by two of the other sex, both near relations, I started for Humphrey Head, aided, for the first time on my visits there, by a vehicle, which conveyed us quite to the spot, thus saving much time as well as fatigue, and enabling us to leave the Cark station for Ulverstone about half past eleven A.M.

The fruits of my explorations, however, on this occasion, although I trust not less attentive than on former ones, were not quite so satisfactory, perhaps, as on my first visit, chiefly owing, I believe, to the tide being up to the very base of the impending cliff for a considerable portion of its extent.

On the beach below the nether portion of the promontory, I picked up in plenty *Triglochin maritimum, Glaux maritima, Plantago maritima, Armeria maritima, Cochlearia danica, Samolus Valerandi, Juncus supinus,* etc.

Passing further on, as far as the tide permitted, I saw on the rocks, *Sesleria cærulea* out of flower, *Hieracium pallidum, H. murorum, Arabis hirsuta, Arenaria serpyllifolia, Prenanthes muralis, Lactuca Prenanthes, Pimpinella Saxifraga,* etc. Of *Hypochœris maculata* I saw some specimens in full flower, but somewhat out of reach, though I was half-inclined to make the dangerous attempt, but was dissuaded by my companions. Had the tide permitted a further advance along the base of the rock, I doubt not that I might have collected specimens, as I did last year, both of it and of *Veronica hybrida, Silene maritima,* etc.

Compelled thus to retrace my steps, I scaled the wall skirting the wood, and passing up it by an imperfect, craggy path, pointed out to me last year, I was enabled readily, though not without some scrambling, to reach the summit, and thus avoided a very circuitous route, involving much time and labour. I regretted not having time for a more protracted research of the wood, and in passing up only observed *Paris quadrifolia* in great abundance, *Polystichum aculeatum,* and the white-flowered form of *Orchis maculata.*

I may remark that I unsuccessfully sought for *Atropa Belladonna* near the wall, where your fair and intelligent correspondent, some months ago, speaks of having found it. I believe it is still found about the ruins of Furness Abbey, some distance off.

Having gained the summit, I found most of its old occupants: as *Spiræa Filipendula; Helianthemum canum* in flower, near the brink of the precipice, in several places, but still rare in comparison with *H. vulgare* near it; *Asperula cynanchica,* which I collected abundantly last year, and transmitted to the Thirsk Botanical Exchange Club, seemed to be entirely supplanted by *Galium pusillum,* probably from my earlier visit on this occasion. The surface of the mount was decorated with *Helianthemum vulgare, Thymus Serpyllum, Euphrasia officinalis, Polygala vulgaris*, etc.

The nearer, bushy, and craggy parts of the hill afforded, copiously, *Geranium sanguineum, Anthyllis Vulneraria, Ligustrum vulgare, Rhamnus Frangula, Rubus saxatilis*, etc.

Being met again by my friends just as I had completed my researches, we returned direct to the Cark station in time for the train to Ulverstone, where I had occasion to stay a few hours, and left there, about four P.M., by the train for Coniston, passing the venerable remains of Furness Abbey, which I had visited on a former occasion.

After enjoying a beautiful day at Flarkburgh, Humphrey Head, Ulverstone, etc., the sky began to darken, and a storm appeared impending as we reached Coniston. At the latter place the railroad ceased, and we entered the coach for Ambleside. We were scarcely seated, before the rain began to fall very heavily, accompanied by almost incessant thunder and lightning, which did not cease until we were about alighting at the end of our day's travelling.

Early the following morning, before breakfast, I visited Stockgill-Force Wood.

Here I found *Impatiens Noli-me-tangere* in tolerable plenty in two places, though not yet in flower. *Crepis paludosa* abounded throughout the wood; also *Galium saxatilis, Lysimachia nemorum*, and *Melampyrum pratense*, etc. I had hoped to find *Melampyrum sylvaticum*, which I thought I had collected there on a former occasion, but certainly on this I could only meet with the commoner species.

Myrrhis odorata I found a large patch of, in a lane skirting the south-easterly side of the wood, and apparently as truly indigenous as I have often formerly seen it in some places near Settle, Yorkshire.

Leaving Ambleside soon after breakfast, the morning being very fine, we sailed down Winandermere lake to Bowness, but the train not starting for Manchester for some time, we took advantage of a boat, and were rowed round Curwen's Island, but in this pleasant trip *Lobelia Dortmanna* was the only plant collected.

In conclusion, I may remark that, although looked for about Flarkburgh and Cark on the Cartmel road, not being quite up to the places where it grew, and where I had formerly seen it, I failed to meet with *Sedum anglicum*, which grows abundantly in many places in the north of Lancashire and Westmoreland, on rocks and stones, especially on grit, rather than on limestone, and nowhere, perhaps, more abundantly than in Langsleadale, above Kendal.

[Our very kind correspondent sent subsequently the following addendum:—"My son, Joseph Windsor, visited the station of *Noli-me-tangere* about a month later than the time when I was there. He found, he reports, that the plant is abundant there and in full flower, 27th July."]

OXFORD MOSSES.

Additions to the List of Oxford Mosses. By H. Boswell.

In a few preliminary remarks to a list of Mosses sent you last autumn, I hazarded an opinion that the number of species still to be found in this neighbourhood over and above the hundred and twenty therein enumerated, would probably not exceed ten. In this I have under-estimated the richness of our local Flora, and undervalued the bryological riches of the district; for since that time myself and my friend Mr. Holliday have discovered as many as thirteen species additional to those before given; and if so many have been found in nine months, it would seem not unreasonable to hope for yet more, especially as some of these present are by no means such as would have been deemed most likely to form part of the supposed ten. As it is probable that I shall have less time to devote to the subject in future, I now beg to offer you a list of the addenda, as the best reparation in my power to make for the disparagement cast upon the productiveness of the neighbourhood; and likewise as an encouragement to such of your readers, if any such there be, as may be, like myself, young in the study, to persevere, and still hope for greater success, however great or however little they may have hitherto found, and to induce them to think nothing done while aught remains to do.

Besides the new species, five others, formerly given as occurring only in a barren state, have since been found in fruit.

In addition to these, four species, which I have failed to meet with in this district or county, have been communicated from the vicinity of Faringdon, by Mrs. Milne. From the close resemblance in respect to soil, etc., between the two counties, and their close proximity, it may perhaps be expected that some or all of them may occur in Oxfordshire, as well as in Berkshire.

Phascum alternifolium. Hedge-banks between Shotover and Cuddesden, opposite the windmills; near, but not mingled with *P. subulatum.* Fruit, April, May.

Phascum crispum. Roadside between Gosford and Weston-on-the-Green, near Islip. One small tuft was brought by Mr. Holliday, but no more could be found. Fruit, April, May.

Gymnostomum tenue. On stones in the canal bank near Wolvercott, in tolerable plenty. Fruit, June.

Gymnostomum microstomum. Between Shotover and Cuddesden, mingled with *Phascum alternifolium.* Roadside through Bagley Wood. April.

Pottia truncata, var. *major.* South Hinksey; scarce. March.

Didymodon flexifolius. Powder Hill Copse, fruiting plentifully; growing in company with *Leucobryum glaucum* and *Campylopus torfaceus.* February, March.

Tortula vinealis. Headington Hill; fruit very scarce. June. Barren in one or two other places.

Tetraphis pellucida. North side of Shotover Hill, with numerous *cyathuli,* or cups bearing *gemmæ,* but no fruit.—These *gemmæ,* or buds, are an admirable provision for continuing the existence of the plant in the absence of fruit, and very interesting objects for the microscope. Schimper thus speaks of them :—"Cyathuli nullam affinitatem morphologicam habent cum capitulis pseudopodiorum Aulacomnii quæ e foliis abortivis efformantur, dum cyathuli laudati e foliis perigonialibus hypertrophis æque antheridiis deformatis originem ducunt."

Bryum pallescens. Dry bank by the road between Gosford and Weston; small. Moist bank in a field by the Cherwell, near Parktown; growing among grasses and *Carex glauca,* and more than twice as large. Fruit, June, July.

Fissidens exilis (*T. Bloxami*). Copse near Watereaton, intermingled with *F. incurvus.* Clay bank near Bagley Wood, in company with *F. bryoides.* Fruit, February, March.

Fissidens incurvus (*F. viridulus, ε incurvus,* Bryol. Brit.; *F. incurvus,* in part, Schpr. Synopsis Musc.). Copse near Watereaton. Thicket near Bagley Wood. Near Cumnor. Fruit, February, March.—This seems to be quite distinct from *F. viridulus,* though Schimper unites them and *F. tamarindifolius.* Specimens of *F. viridulus,* communicated from Lancashire by Dr. Wood and Mr. Nowell, have synoicous flowers.

Hypnum radicale. Shotover Plantations, very sparingly, with *H. filicinum,* etc. Fruit, April.

Hypnum palustre. Stones in several places along the canal; sometimes mingled with *H. riparium.* Fruit, April, May.

Hypnum fluitans. By the road from Gosford to Watereaton; plentifully. Frequent about Woodstock, *Mr. Holliday,* Barren.

Hypnum Kneiffii. Deep ponds near Bagley Wood, with a few female flowers. Further edge of Bullingdon. Lane between Marston and Headington Copse; growing among grass with *H. cuspidatum.* Near Weston-on-the-Green, *Mr. Holliday.* Some stems two feet in length.—The Marston locality agrees with that given by Sibthorp for *H. fluitans,* and this probably is his plant.

Species found in fruit since the former List.

Polytrichum piliferum. Wootton Heath; sparingly. May.

Hypnum Swartzii. Headington Copse, near Marston. Copse near Watereaton. Near Cumnor. December, February.

Hypnum purum. Coombe Wood, near Cuddesden. Wootton Heath. Winter.

Hypnum tamariscinum. Headington Wick Copse. Copse near Watereaton. Winter.

Hypnum squarrosum. Coombe Wood, near Cuddesden. Winter.

Berkshire Species. (MRS. MILNE.)

Mnium cuspidatum. Woods near Buckland.

Splachnum ampullaceum. Near Pusey.

Hypnum albicans. The Warren, Buckland.

Hypnum undulatum. The Warren, Buckland.

June 28, 1861.

CHAPTERS ON FUNGI.

By ARCHIBALD JERDON.

CHAPTER VII.

I now come to the fourth Order of the Fungi, viz. that of HYPHOMYCETES, which is characterized by the spores growing on threads or flocci, which are generally erect, and often accompanied by a creeping (or horizontal) mycelium, formed of similar threads, called an *hyphasma*. Many of the Fungi of this division are popularly known under the general name of "Moulds," and are found in all parts of the world. They are very destructive to all organic substances, inducing or hastening decay, and even inorganic substances are not free from their ravages.

Suborder 1. ISARIACEI.

Common receptacle or stem compound; spores terminating the threads (or cells), pulverulent.

A small but interesting group of Fungi, in some instances approaching the *Hymenomycetes*. I shall notice the genus *Anthina*, which approaches *Clavaria* in form, though not in structure.

ANTHINA.

Stroma vertical, elongated, dilated upwards, contiguous with the at length rigid somewhat attenuated stem, floccose, covered with sporiferous flocci, free only at their apices.

ANTHINA FLAMMEA, Fr. *Flame-coloured Anthina.* Attenuated downwards, smooth, bright red-saffron, dilated above, plumose, yellow.

On dead sticks, leaves, etc.

A pretty little Fungus, about an inch or so in height, and of a beautiful red colour, with yellowish tips. It is not common, and requires to be sought for among dead leaves, etc., in damp woods.

Suborder 2. STILBACEI.

Mycelium floccose or cellular; stem or receptacle composed of compacted threads or cells, the tips of which produce minute diffluent spores.

In this group the stem (or stroma) is compound, as in the last, but the spores are moist and diffluent, instead of being dry and volatile.

I shall take as examples the genera *Stilbum* and *Tubercularia*.

STILBUM.

Spores collected into a solid head, involved in jelly. Flocci forming a solid stem.

STILBUM TOMENTOSUM, Schrad. *Glandular Stilbum.* White; head globose; stems equal, glanduloso-tomentose.—*Grev. Sc. Crypt. Fl. t.* 281.

Parasitic on different species of *Trichia* (a genus of the Order *Gasteromycetes*).

A curious microscopic plant, not of common occurrence. It appears as minute white dots on the affected Fungus, and requires a considerable magnifying power to determine its structure.

TUBERCULARIA.

Spores simple, subglobose, closely packed upon an erumpent, distinct, more or less stemlike disk.

The genus is now considered to be a spurious one, and the different so-called species to be, in all probability, immature or undeveloped states of species of *Sphæriæ*.

TUBERCULARIA VULGARIS, Tode. *Common Tubercularia.* Erumpent; stratum of spores red, margin naked.

On dead sticks and branches; extremely common.

One of the commonest of our Fungi, occurring on almost every kind of dead or dry wood (except that of Coniferous trees). It forms small, pale red, raised dots or spots, about a line in breadth, on the branch affected, and affords, when examined by the microscope, a multitude of minute oblong spores. It is now considered to be a state of *Sphæria cinnabarina*, of which Fungus it undoubtedly in many cases forms the stroma or base.

Suborder 3. DEMATIEI.

Mycelium floccose or cellular, mostly sparing; fertile threads erect, carbonized, and rigid; spores whorled or collected in heads, often large and septate.

Many curious forms occur in this suborder, which is distinguished by its carbonized (or dark-coloured) threads. These are generally of a dark brown, approaching to black, but often have a shade of olive. I take the genus

CLADOSPORIUM.

Spores arranged in short moniliform branchlets, at length falling off. Flocci septate above.

CLADOSPORIUM HERBARUM, Lk. *Common Cladosporium.* Tufts effuse, soft, dense, green, then olive-black; fibres collapsing, pellucid, as well as the olivaceous spores.

On all sorts of decaying substances. Very common.

Forming a short dense stratum, or scattered tufts of a dark olive-green colour, generally extending over a considerable surface. The spores, which are somewhat variable in size, become at length uniseptate. Mr. Berkeley says, "This is perhaps the commonest of all Fungi, growing on all decaying substances, and in consequence assuming various forms."

A variety, *Cladosporium Fumago* of authors, attacks the living leaves of fruit-trees, and does much mischief.

Suborder 4. MUCEDINES.

Mycelium generally abundant, giving off erect fertile threads, which are mostly white or coloured. Spores generally simple, scattered, or collected into little heads, sometimes forming simple or branched moniliform threads.

A large group, comprehending most of the productions known under the common name of "Moulds." They attack living structures, as well as those in a state of decay, and are often very injurious to man. It is still a question whether parasitic Fungi are the cause or the effect (or rather the accompaniment) of decay; but there can be no doubt of this fact, that decaying substances afford a favourable *nidus* for these plants.

I shall notice two genera of this suborder, *Aspergillus* and *Botrytis.*

ASPERGILLUS.

Spores simple, globose, more or less disposed in moniliform rows, closely packed upon the apices of the fertile flocci.

ASPERGILLUS GLAUCUS, Lk. *Blue Mould.* Sterile flocci effused, white, fertile, simple, their apices capitate; spores rather loosely packed, at length glaucous.

On various decaying substances, as bread, cheese, etc.

This is the common "Blue Mould," and too well known to need any further description.

BOTRYTIS.

Spores simple, collected in little sori (or heaps) on or towards the apices of the flocci and their branches.

BOTRYTIS EFFUSA, Grev. *Spinach Mould.* Pale purplish-grey; spreading fertile flocci branched above; branches short, divaricate; spores large, oval.

On the under side of the leaves of the garden Spinach; common.

Forming effused pale purplish-grey spots on the under side of the leaves, and rendering the leaf attacked yellow, especially over the spots.

Another species, *Botrytis infestans*, is generally considered to be the cause of the potato-disease.

Suborder 5. SEPEDONIEI.

Mycelium predominant. Spores arising immediately from the mycelium, or from very short fertile threads, very abundant, generally large.

A small group of Fungi, characterized by the high development of the spores, while the fertile threads are much reduced, and the plants therefore appear to consist almost wholly of spores. I take the typical genus *Sepedonium* as an illustration.

SEPEDONIUM.

Spores globose, pellucid, at first covered by the flocci of the fleecy mycelium.

SEPEDONIUM CHRYSOSPERMUM, Lk. *Yellow Sepedonium.* Flocci fleecy, dense, white, spores golden-yellow, not appendiculated.—*Grev. Sc. Crypt. Fl. t.* 198.

On decaying Fungi, common, frequently penetrating the whole Fungus, and converting it into yellow dust.

It is found principally on *Boleti* and some Agarics, and its presence may be known by the unhealthy appearance of the plant, and in particular by a white cottony web or coating which covers the affected part. When this is broken open the yellow spores are seen filling the interior. They are very minute, and it requires a high power of the microscope to render them distinct.

PLANTS OF INVERMAY.

Seven Hours' Botanizing in the Den of Invermay.

By John Sim, A.B.S.Ed.

The "Birks of Invermay," so finely celebrated in Scottish song, I have long wished to visit; not so much with a view to admire the scenery as to explore the botany.

The Den of Invermay, which contains the "Birks," extends from about a mile below Invermay House until the Ochil Hills, from which the small river May has its source. This rapid stream traverses the entire Den from beginning to end, until within a mile of its junction with the Earn, where the ground is flat on both its banks.

The May, unlike the sluggish Earn, is a pure and rapid stream, abounding in trout, and adorned with the most exquisite scenery imaginable. The small river comes bounding down along a rocky channel, at one time purling gently along amongst boulders, at another leaping over precipitous rocks and falling in deep pools, again rapidly pursuing its course onward, confined in deep fissures worn by its waters during the lapse of countless ages already gone by. This is a theme for a geologist, who will find much in these water-worn rocks to amuse and instruct.

The banks of the May are well wooded with "Birk" (Birch), Oak, Hazel, and Ash, etc., the three former undoubtedly planted by Nature and not by man. The fragrant Birch-trees are certainly of great antiquity, as their immense size plainly indicates. The Oaks too are often large, and well bound with Ivy.

The river May traverses the parish of Forteviot, and after a course of about nine miles from its source in the Ochil Hills, falls into the Earn, near the bridge of Forteviot, about six miles south-west of Perth.

As I said, I had long intended to visit the Den of Invermay, but I never, from some cause or other, accomplished my design until the 4th of June, 1861, when I and a young friend took train for Forteviot station, and on arriving there we steered our course directly up the left bank of the May, for the purpose of collecting and examining the wild-flowers which grew in the vicinity of this little river. What we got there during our seven hours' ramble, you shall now see. In sheep-pasture, a little to the south of Forteviot station, we saw an immense quantity of *Astragalus hypoglottis;* in fact the grassy turf was literally blue with this plant in many places: being a rather rare species we gathered a good supply. Nearer the river's brink grew plenty of *Lotus corniculatus, Anthyllis Vulneraria, Cardamine amara, Lychnis diurna,* and *Artemisia vulgaris;* by the roadside, *Cerastium arvense;* and on the pasture, near Forteviot bridge, *Briza media;* near the riverside we collected a few examples of *Hesperis matronalis.* About three-quarters of a mile from Forteviot station we entered into the woods of Invermay, and after passing onward about a quarter of a mile further, came into the Den, where a pathway has been kindly constructed by the proprietor. Our first capture worthy of record was *Campanula latifolia,* it is plentifully and widely distributed all along the Den; we also collected *Carex sylvatica* and *C. pallescens,* neither properly developed. *Arenaria trinervia* was frequent. *Asperula odorata* was in super-abundance; so was *Geranium sylvaticum, Lychnis diurna,* and *Agraphis nutans;* these plants were in profusion. *Anemone nemorosa* seemed to be equally abundant, but had gone out of flower. *Geum intermedium* and *G. rivale* were also plentiful, but *G. urbanum* very rare. *Asplenium Trichomanes* in some places fringed the rocks abundantly, and our common *Polypodium* and *Lastræa Filix-mas* grew everywhere. *Polystichum lobatum* adorned the deep rocky ravines, and *Cystopteris fragilis* hung its delicate fronds within the spray of the roaring linn. *Helianthemum vulgare* and *Thymus Serpyllum* garnished the rugged cliffs, and the "bonnie Broom" adorned with its golden blossoms their summit.

The music of the feathered race saluted the ear, and by their mellow music rendered our happiness complete. The cuckoo's monotonous lay was heard in the distance, while the strains of the mavis, deliciously varied, resounded throughout the neighbouring trees.

Passing still upwards, we all at once came upon a fearful ravine, spanned by a narrow wooden bridge. Many feet below, the river, almost hid by rocks, drove rapidly along. A few yards above the bridge, a fine cascade tumbled its waters into a frightful abyss. The scene was grand and solemn: not a sound to be heard but the "roar of the linn;" not a thing to be seen but the umbrageous canopy of the surrounding trees and the huge walls of rock above, and the yawning chasm with its waters below. We crossed this wooden pile, and soon, under the trees, discovered *Rubus saxatilis* and *Neottia Nidus-avis*, the latter certainly a rather rare and very local plant. There were only a few plants of it, which we took with us.

I here subjoin a list of the most of the plants I observed and collected during my seven hours' ramble by the river May. Those plants whose occurrence I consider universal are omitted.

Adoxa moschatellina.
Agraphis nutans.
Aira flexuosa.
Ajuga reptans.
Anemone nemorosa.
Anthyllis Vulneraria.
Arctium Lappa.
Arenaria trinervia.
Artemisia vulgaris.
Asperula odorata.
Asplenium Trichomanes.
Astragalus hypoglottis.
Athyrium Filix-fœmina.
Betula alba.
Brachypodium sylvaticum.
Briza media.
Bunium flexuosum.
Campanula latifolia.
Casdamine amara.
Cardamine sylvatica.
Carex pallescens.
Carex præcox.
Carex sylvatica.
Cerastium arvense.
Cystopteris fragilis.
Digitalis purpurea.
Festuca ovina.
Festuca duriuscula.
Fragaria vesca.
Galium uliginosum.
Geranium lucidum.
Geranium sylvaticum.
Geum intermedium.
Geum rivale.
Geum urbanum.
Helianthemum vulgare.
Hesperis matronalis.
Hypericum hirsutum.
Hypericum perforatum.
Hypericum pulchrum.
Iris Pseudacorus.
Lamium album.
Lastrea Filix-mas.
Listera ovata.
Luzula campestris.
Luzula pilosa.
Luzula sylvatica.
Lychnis diurna.
Melica uniflora.
Mimulus luteus.
Neottia Nidus-avis.
Orchis maculata.
Orchis mascula.
Oxalis Acetosella.
Petasites vulgaris.
Phalaris arundinacea.
Pimpinella Saxifraga.
Polygala vulgaris.
Polypodium vulgare.
Potentilla reptans.
Primula vulgaris.
Prunus communis.
Pteris aquilina.
Pyrola minor.
Ranunculus auricomus.
Reseda Luteola.
Rhinanthus Crista-galli.
Rosa spinosissima.
Rosa villosa.
Sambucus nigra.
Sanicula europæa.
Sarothamnus scoparius.
Saxifraga granulata.
Scrophularia nodosa.
Silene inflata.
Stachys Betonica.
Stellaria nemorum.
Stellaria Holostea.
Thymus Serpyllum.

Bridge End, Perth, June 1861.

BOTANICAL LETTERS FROM ARGYLESHIRE.

By James Lothian.

No. I.

Sir,—Permit me, in the first place, to give you a general idea of this district, on the botany of which I propose to send you an occasional letter, as opportunity occurs.

If you look for a moment on Black's map of Argyleshire, you will see that this district consists of a long peninsula, forming the southern division of the county of Argyle. It extends north and south. Its average length between Loch Tarbert and Southend will be about forty-five miles, and its average breadth about seven miles. This is the district of Cantyre proper. The peninsula extends however beyond Loch Tarbert some fourteen miles further, terminating at the Crinan Canal. This district north of Loch Tarbert is termed Knapdale, and forms the northern division of the peninsula. Properly speaking, the peninsula of Cantyre is bounded on the north by the Crinan Canal, on the east by the Sound of Killbrandon and part of Loch Fine, on the south by St. George's and the North Channel, and on the west by the Atlantic Ocean. Its average length may be quoted roughly at sixty miles, and its breadth nine miles; its geographical position about 55° N. and 5° 36′ W.

This district is partly hilly and partly level. A chain of hills extend along the centre from the south to the northern extremity. and it is intersected by beautiful heaths, plains, and glens. The district around Campbeltown, the principal town in the county, consists of fine level tracks, which extend along the west and east shores for fifteen or twenty miles, and stands at a small elevation above sea-level. The north-eastern portion, as you approach the Crinan Canal, is finely wooded. The north-west and south-west is mountainous and rugged. At the latter point stands the well-known light-house of the Mull of Cantyre, the guiding star of the mariner coming in the North Channel.

The district of Kintyre proper is rather defective in wood; nevertheless some plantations of Larch, Fir, Oak, and Hazel coppice are met with, as at Limecraigs, Carradale, Carskey, Largie, and on both sides of Loch Tarbert, which is well wooded and very picturesque. The Elm, Laburnum, Turkey Oak, and *Pinus maritima,* perhaps above all others, thrive best at these places. Further north the Birch and Oak as well are magnificent.

This district contains many small rivers, and numerous freshwater lakes, but not of any magnitude, of which I may make further mention in the course of our correspondence.

The climate is humid, but generally mild, still visited not unfrequently by severe and stormy gales from the south, west, and south-west.

There is some scope for the student of history and antiquarian lore, from its having been in former times the field of battles and feudal warfare between the Campbells and M'Donalds, lords of the isles, and some of the Celtic chieftains of the Emerald Isle. It has also been the scene of the labours of some of the early apostles of the Christian Reformation, and at a later period formed an asylum to the persecuted Covenanters. Here also King Robert Bruce sought shelter and found it. There are some ancient castles and burying-grounds; of the latter at least eighteen or twenty, possessing more or less interest to the antiquary and student of history. One of the most interesting objects of this description is an ancient stone cross which stands in the centre of the town of Campbeltown. It is elevated some five feet or six feet above the level of the street, on a platform, to which a flight of steps leads. Underneath the platform is a fine spring, which supplies this section of the town with water. The cross itself is a fine piece of workmanship, consisting of Runic knots and wreaths, and bears an inscription in raised Saxon characters on one side, telling who the owners were, and who erected it. It was conveyed from the island of Iona to its present site, where it is a great ornament to the town, and is an object of interest to all visitors.

Kilkenan Castle stands also in the vicinity, said to have been erected by King James V. of Scotland. Close to this ancient Castle there is a beautiful and picturesque country, laid out about two years ago, designed by Mr. J. Lothian, garden architect and surveyor. It forms a fine promenade, and is much visited by inhabitants and strangers. In an old burial-ground adjoining the cemetery there are some monuments of considerable antiquity.

I may mention in passing that agriculture is brought to high perfection in this district. In some departments of this science it is perhaps second to none in Scotland, and for which we are chiefly indebted to the enterprising, intelligent, and energetic commissioner to his Grace the Duke of Argyle, who is the chief proprietor in the district, ample communication being afforded between the highland and the lowland districts by steamers daily. The harbour of Campbeltown is one of the best in the kingdom, and the first on the west coast of Scotland.

Cantyre is a field for the sportsman and lover of the gun, good game being abundant. Most of the lands are occupied for this purpose by English gentlemen. It is also good for the lovers of the rod, although for fresh-water fishing far inferior to such as the lake districts of Perthshire. Sea fishing can be enjoyed to perfection.

The ornithologist, entymologist, and geologist will each find here considerable scope for research. To the botanist it forms a fair field for exploration. Hitherto it has not been much visited by professional botanists, with the exception of Professor Balfour of Edinburgh. Some years ago the learned Professor, with a party of his students, made an excursion through the district, with the neighbouring district of the island of Islay, and published the results of this botanical excursion, but for private circulation only, which, with my own knowledge of the botany of our district, enables me to report it to my botanical brethren as a fair field for exploration. In cryptogamic plants it is very interesting.

I should have added that the islands of Sanda and Gigha on the coast forms part of this district, and can be easily explored, particularly during the summer months.

In my anxiety to give an idea of the district, I am afraid I have extended this epistle beyond reasonable bounds, and for the present must content myself by a bare indication of the botany of the district by simply naming a few of the plants to be met with.

Among phænogamous plants I may mention the following, viz. *Convolvulus Soldanella*, *C. sepium*, *Saxifraga oppositifolia*, *Anagallis tenella*, *Galeobdolon lutea*, *Linum catharticum*, *Prunella vulgaris alba*, *Epilobium latifolium*, *Nymphæa alba*, *Ranunculus aquatilis*, *Sagittaria sagittifolia*, *Rubus saxatilis*, etc.

Among Ferns the genus *Scolopendrium*, *Asplenium*, and *Aspidium* are well represented. We have also the *Hymenophyllum tunbridgense* and *Osmunda regalis* abundantly; and the student of marine botany will find our shores an interesting field for practice. Meantime I must reserve further details until my next.*

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* Some readers of the 'Phytologist' would be obliged to Mr. Lothian for specimens of *Epilobium latifolium*.—ED.

BOTANICAL NOTES FOR MALVERN.

The Vernal Flora.

> "Let Mother Earth now decked with flowers be seen,
> And sweet-breath'd zephyrs curl the meadows green."

I have no intention so to load these "Botanical Notes" with technical scientific definition or verbiage, as to render them unreadable; for I rather design to glance at the face of Nature pictorially, picking up a flower here and there, when it gives a colouring to the scene, and thus inciting the wanderer to a study of the beautiful and curious from the appearance it makes, seemingly to invite attention. I once met a rustic working man in one of my excursions in South Wales, who had got some not very common plants in his hand, which caused me to inquire if he was a botanist. "Why, Sir," was his reply, "I can't tell the learned names that you botanists give to flowers; but as I go along the lanes, and look under the hedges, the opening blossoms seem to speak to me, and I can't help plucking them to examine their loveliness, and hear what they have to say." There nature spoke out, and the simple, unsophisticated Welshman opened his heart to those influences that are supposed to be most powerful when addressed to the cultivated mind, though this is not invariably the case. But people in general would study botany more, and like it better, if they paid attention to the minute objects that make up the local colouring of a scene, and tried to understand them in all their bearings. Even if they got but little beyond *artistic* knowledge, this would be worth possessing, and they could go into botanical nomenclature if the charm carried them on to do so. Yet, how few, comparatively, could account for the tints upon a rock standing forth out of the Malvern Hills, and, from recollection, give it the proper hues, or know what plants contributed to the local colouring the rock possessed; perhaps even a pre-Raphaelite painter would be puzzled: but if he knew anything of botany, what an insight into correct form and changing colour, under different circumstances, would he possess! The rock that is black as charcoal in the midst of summer, with the dry burnt-up skins of the *Umbilicaria* lichen, looks very different when all those innumerable crowded thalli are olive-green under the influence of the vernal rain; and where the purple investiture of the *Jungermannia* covers the base of rocks with a regal robe, the tinting that prevails is and must be very different to that where the bare syenite is merely studded with circles of the white "Crab's-eye" lichen, or the irregular green patches of the *Lecidea geographica.* So also Flowering Plants, when in sufficient abundance, present artistic features that vary according to the season of the year, so that a drawing or painting ought really to denote at what period the view is taken; and when photography gives *colour* as well as form, a view will correctly denote this. As remarked in the 'Botany of the Malvern Hills,' by E. Lees, F.L.S., to which in our Notes we must of necessity refer as a text-book of the plants of the district, it is thus remarked:—"In summer the immense quantities of Foxglove (*Digitalis*) give a rich pink hue to the rocky slopes they cover, often mixed with the tall golden torches of the great Mullein, *Verbascum Thapsus;* while in other spots a bright purple mantle is created by the flowering of the wild Thyme. As autumn slowly approaches, the gorsy patches sparkle most refulgently, though their golden splendour is somewhat chastened by the burnt-umber of the withered brakes extending far and wide, and scorched by the blaze of August. In May, the Hawthorns and Mountain Ashes wave on the sides of many of the ravines in milk-white purity, while in autumn their pendent coral berries give another phase of beauty to the inspiring and diversified scene." Much more might be said on plants and flowers thus considered pictorially, and the subject is so interesting and suggestive that I may possibly recur to it again. The latest improvements in the laying out of flower-gardens and ornamental grounds have now reference to *colour,* and thus whole parterres of the same flower placed together are now brought to display spreads of crimson, lilac, azure, or gold, contrasting or combining in the most alluring manner. For a natural display of this kind we again commend a sight of the beds of wild lemon-tinted Daffodils in Eastnor Park, which, once seen, will long live in the memory.

I must now advance to the Vernal Flora, which is beginning to unfold in all its varied lustre, notwithstanding that cold winds will blow, and that what country people call "blackthorn weather" is sure to annoy the explorer about the time that the Sloe or Blackthorn, *Prunus spinosa,* comes into flower, and "that is now," as the song testifies.

The Vernal Flora may be considered as introduced by the "Lady-smock," *Cardamine pratensis*, or Cuckoo-flower, which in warm spots is in flower by Lady Day, March 25th, though its culmination or general flowering does not take place before a month afterwards. Now it is that, according to Shakspeare,—

> "Cuckoo-buds of yellow hue
> Do paint the meadows with delight;"

these "cuckoo-buds"—so called in an opened state, as we have ascertained is still the Warkwickshire term for them—becoming when the sun breaks forth at noon the resplendent golden stars of the Pilewort, *Ranunculus Ficaria.* In damp, oozy spots, as before remarked, the Marsh Marigold, *Caltha palustris*, becomes pre-eminently splendid, and dazzles from afar; while the well-known jagged-leaved Dandelion becomes very numerous among the springing grass, to which its yellow composite flowers offer a brilliant contrast, while a later period of the vernal floral region is marked by their conspicuous white clocks. Now, it is that the exquisitely beautiful

> "Love-sick Cowslip that the head inclines,"

and that gives out so pleasing a fragrance, scatters its pale-yellow clusters over the pastures; and on the margin of woods the early Purple Orchis, *Orchis mascula*, becomes a brilliant object of attraction, distinguished as much almost by its spotted leaves as its broad purple spike of flowers. This merits poetical as well as botanical notice by being the "Long Purples" that fair demented Ophelia held in her hand among the "Dead Nettles" and other emblematic flowers of the spring that she gathered and contemplated ere the "envious sliver broke" that plunged her delicate form in the fatal waters. Willie Shakspeare knew the vernal flowers of Warwickshire pretty well as to their vernacular names, whether handled by "cold maids" or "liberal shepherds." But more anon on the vernal flowers, when we can get a truly bright vernal day to rejoice among them, as we have done of yore, among friends dead, changed, or lost—though still embalmed in the memory of pleasant excursions.

Just one glance on the turf of the hills, to show the tints that come and go, variable as the hues on beauty's cheek, or those that stern Time himself gives to human prospects, or the changes that, alas! brighten up for a moment or shadow the mind. "Early in the spring," to quote again from the 'Botany of the Malvern Hills,' we find "the Wood Spurge, *Euphorbia amygdaloides*, throws a light-green verdure about the declivities, contrasting well with dead Grasses, withered Brakes, and the dark tufts of yet unflowered Gorse; soon after, tufts of Broom, *Sarothamnus scoparius*, in many spots vein the hillside with golden gleams; and still later the rising and uncurling fronds of the Brake give a verdant cincture to the then arid masses of rock bearded with crisp Lichens. But on the rocky masses themselves much depends upon a showery season, as then minute plants are well developed, scarcely observable at any other time."

The Mosses remain at their acme of perfection, and should now be studied and collected by those fond of that elegant tribe of the cryptogamic plants. The species that presents itself at present so abundantly on the rough stone walls, and with its crowded green thecæ, or stalked urns, gives them such a pleasant verdant colouring, is the *Bryum cæspititium*. A beautiful little *Byrum*, with star-like tufts of leaves, called *Byrum roseum*, grows in the little beech-wood on the hillside at Malvern Wells.

Note.—We have this week received information from an esteemed and acutely observant botanical friend now visiting Malvern, that he has lately found a considerable quantity of that delicate little plant the *Adoxa Moschatellina* in the space between the well-known Purlieu Lane and Mathon Lodge, late the residence of Canon Cocks. In such a beautiful locality an enthusiastic wanderer might well exclaim—

"Ah! little *Adoxa*, they say
Thy flower possesses no glory,
But I'll at thy habitat stay
And prove 'tis a palpable story."

I might, indeed, whisper in the ear of curious botanical visitors to or residents of Malvern, If you want to find any rare plants, search the vicinity of Purlieu Lane.

(*To be continued.*)

Reviews.

Flora of Preston. By CHARLES JOSEPH ASHFIELD.—Parts I. and II., reprinted from the Transactions of the Historic Society of Lancashire and Cheshire, Vols. X. and XII. Read 21st January, 1858, and 16th February, 1860.

Botany is well represented in Lancashire, though there is no county list of its floral productions extant. There are excellent Floras of Manchester and Liverpool, and a complete list of the plants growing near Preston may be confidently expected. The two parts now before us give promise of a more comprehensive work on this subject.

Our object in giving publicity to what is now doing in Preston is twofold; first, to invite those botanists who reside in Lancashire, or who have botanized about the lower part of the river Ribble or along the shores of its estuary, or on the banks of the Irish Sea, to assist the compiler of this new Flora with all the information they can supply about the plants and localities of the district; second, to induce such of our readers as mean to visit Lancashire and the lakes of Westmoreland and Cumberland, to take Preston in their way thither, and to spend a day or two investigating the vegetation of the sandhills about Lytham, Blackpool, the Naze Point, etc., or to look into the peat bogs, or hunt the moors which are so plentiful in this part of the county.

We hope that the following list of rarities will be a sufficient inducement to them to take our counsel.

Our author tells us that *Chelidonium majus* is now scarce in the immediate vicinity of Preston, "being much sought after by herbalists." We thank Mr. Ashfield for this useful hint; though there is naturally on our part a desire that no plant should be extirpated and lost in any part of the country, yet we are pleased to hear that there are some who find uses in plants generally deemed worthless. This species in bygone times was an herb of renown; but now, like many other plants, it is neglected. It is more than probable that the faculty *now* can obtain many more potent remedies for the numerous bodily ailments to which poor humanity is subject; still it is satisfactory to know, from the experience of a more enlightened age, that the reputation of our ancestors is not a modern delusion, and that their knowledge and wisdom were not mythical.

Aquilegia (Columbine) is occasionally found in woods by the side of the river Brock, between its source and the railway station. It is much to be desired that the learned author would give us a map of the country with the stations where his plants grow prominently marked. It would be very gratifying to us to tell our readers where this wood is, but we hope they will get a better informed guide to this locality than the writer of this notice. The other rare plants of *Ranunculaceæ* and its kindred Orders, are *Ranunculus Lingua,* between Blackpool and Kirkham; and one of the two British Hellebores, *H. viridis,* "a thicket by the side of a foot-path leading from the wood, Plumpton road to Cottam Hall." *Trollius europæus* is not a rare plant in the Craven district, and in this Flora it is localized "near the Liverpool Waterworks, in Heath Charnock;" also "at Plymouth bridge, near Chorley." *Corydalis lutea* is found both as a weed in gardens and on old walls. We have seen it cultivated in cottage gardens, and sometimes spreading through the hedge or paling fence, but it is more partial to walls.

Asarum and *Aristolochia,* both renowned and very scarce plants, are found in this district, the former at Barton the latter at Warton, on the right side of the road to Lytham.

Geranium phæum is also one of the Preston plants, and here, as in most if not in all other parts of England, a doubtful native. It is reported as found in a meadow and in an orchard, localities that will not pass muster among some botanists. To *G. pratense, G. sanguineum,* and *G. lucidum* there is no objection. As *G. sylvaticum* abounds in pasture-fields in Craven, it may turn up not far from Preston: probably much nearer than Pendle Hill, where *Primula farinosa* is said to grow, and where *Pinguicula vulgaris* certainly grows. As the former is found on the Lancashire side of the Ribble, somewhat further north than Skipton, it may be expected on the Pendle Hills, which are much higher than any of the hills near Settle, about which *Primula farinosa* grows abundantly.

Utricularia vulgaris and *U. minor* occur here, the former at Martinmere and the latter on Leyland Moss. *Hottonia palustris* is found with the former, and the queen of British aquatics, *Nymphæa alba;* also *Hippuris vulgaris* and other more common aquatic plants.

If we were asked by a farrier, or perhaps we should write by a cowleech or a horse-doctor (forgive us, ye practitioners o the noble art of healing the many ills flesh is heir to) where grows Hound's-tongue? We should answer unhesitatingly, Between New Brighton and the mouth of the Dee, along the sandhills which skirt the Wirral sea-ward. It appears that the plant is quite as abundant on the sandhills between Lytham and Blackpool. This is a fact worth knowing; for the species, though not to be accounted scarce in the interior of our island, would not, in many counties, afford an unlimited supply of the article. It is the root which the Surrey leeches employ, and they can get but a little of it, and in the winter cannot find it at all. They might soon procure a cartload from the Wirral at any period of the year.

Hyoscyamus niger is another valuable officinal plant of this district. It is not stated that it is plentiful here, but it is very abundant in the counties of Huntingdon and Northampton.

The *Cruciferæ* and the *Umbelliferæ* are well represented in this Flora. The rarer plants of the first-mentioned group are *Lepidium Smithii, Cochlearia danica, Cakile maritima, Brassica monensis, Sisymbrium Sophia*; most of these occur near Lytham: also *Cardamine amara, Nasturtium sylvestre,* near Preston. *Erysimum cheiranthoides* and *Sinapis nigra* grow in cornfields here as everywhere else; although some writer in the 'Phytologist' says it, *S. nigra,* is not a field plant but a waysider. At all events, whatever may be its habitat in Middlesex, here it grows in cornfields, and no mistake. Plants are probably as capricious in their localities as some people are in their dispositions; allowance will be made by those who have a moderate share of the milk of human kindness in their composition; or, what is better, a trace of charity, which is slow to think ill either of men or of plants. The rare Umbellifers muster strong, as we may say in these days of volunteering; *Caucalis latifolia, Myrrhis odorata, Bupleurum rotundifolium, Smyrnium Olusatrum, Œnanthe peucedanifolia, Apium graveolens, Pimpinella magna, Eryngium maritimum, Sison Amomum, Conium maculatum,* and several humbler, commoner species appear in these lists. One of them, *Caucalis,* is probably a straggler, and it will be a question with some critical botanists whether *Œnanthe peucedanifolia* be genuine, or whether it be not the commoner *Œ. Lachenalii.* Those who are on the spot can most satisfactorily decide this point: we give no opinion, because we have no specimens.

Verbascum virgatum is another plant about which the author is not quite positive that it may not be a stray, like the *Caucalis*, *Borago*, *Anchusa sempervirens*, etc. He does not indicate a doubt about the genuineness of the localities for *Ornithogalum umbellatum*, *Gagea lutea*, *Galanthus nivalis*, *Crocus vernus*, *Narcissus Pseudonarcissus;* nor does he hesitate about that of *Saxifraga umbrosa;* he merely says that his belief is that this form should be called *S. hirsuta.*

The *Gentianaceæ*, as might be expected, abound here. The most remarkable are *Gentiana Pneumonanthe*, *G. campestris*, *Chlora perfoliata*, *Menyanthes trifoliata*, *Erythræa littoralis*, (*E. linariæfolia*). Is *Erythræa latifolia* absent? We have seen what is so called, from the vicinity of Liverpool. Possibly our author may agree with some botanists who cannot discover good distinctive characters whereby they can satisfactorily separate *E. pulchella*, *E. linariæfolia*, and *E. latifolia* from *E. Centaurium.*

The rarer *Compositæ* are *Senecio saracenicus* and *S. viscosus;* *Hieracium murorum* is reported as "frequent on old walls, and on heaps of rubbish." We have never seen it on walls. Our belief is that the plant which is so common on the walls of Chester is *H. sylvaticum*, var. *maculatum*, or *H. vulgatum.* We are pretty certain that the *Hieracium* on old walls about Beckenham and Sydenham is *H. vulgatum;* and we further believe that this *Hieracium* received its name of *murorum* because it never grows on walls, as *lucus à non lucendo.*

Pyrola rotundifolia is one of the most interesting plants of the district, and here it abounds. *Bartsia viscosa*, a still greater rarity, grows at Lytham, at the back of the sandhills. *Butomus umbellatus*, with *Stratiotes aloides*, grows near Preston. *Mentha piperita* and *M. rotundifolia*, *Drosera anglica*, *D. intermedia*, and *D. rotundifolia*, *Andromeda polifolia*, *Vaccinium Vitis-idæa*, *V. Oxycoccus*, *Potentilla verna*, *Epipactis palustris*, *Hydrocharis Morsus-ranæ*, etc., grow in this part of Lancashire. Our list is not nearly exhausted, but our readers' patience will not last for ever. Enough has been told to induce botanists to pay a visit to Preston, where they will have far more enjoyment in seeing and collecting the floral treasures of the district, than in merely being informed whereabout they are to be found. R.

A Priced and partially Descriptive Catalogue of Stove, Greenhouse, and Hardy Exotic and British Ferns, Selaginellas, and Lycopods, offered for sale by Abraham Stansfield and Sons, Todmorden. December, 1860.

The varieties of Ferns are steadily increasing; the supply is stimulated by the demand; for this commercial maxim is of universal application. We reviewed Mr. Sim's Fern Catalogue several months ago, not without some wonderment at the numbers of new forms; and again we have to admit as our belief, that curiosities in vegetation will never cease. The varieties, the named varieties alone, of the common Lady-Fern, amount in the Catalogue before us to upwards of two score. The different forms of *Blechnum Spicant* are now 24. Such of our readers as want to know something more definitely about these plants will send for the Catalogue. This brief notice is printed to call their attention to the fact that there is in the north of England an extensive establishment for the cultivation, keeping, and sale of a stock of these charming plants, of which the worthy owners may be justly proud.

It may also be stated that the named varieties of *Scolopendrium vulgare* are above 60. The prices of these not expensive novelties of cultivation, as some of them may perhaps be justly called, vary from a shilling to ten and sixpence. Few indeed—from three to half-a-dozen—reach the last-entered quotation; while fewer still reach the somewhat formidable figure of twenty-one shillings. The buyers can hardly grumble at the prices.

The number of British Ferns in this List, with their varieties all named and priced, is 304 (including the Lycopods).

The hardy exotic Ferns, with their varieties, are above 40. The prices of these vary from one shilling to seven and sixpence.

The greenhouse and stove exotic Ferns, number upwards of 320, and the prices vary from one shilling to thirty shillings.

Since the above was written, a second edition of this interesting Catalogue has been sent by Messrs. Stansfield, and in this amended reprint, several of the typographical errors have been corrected. We should feel obliged to our respected contributors to tell us if *Cystopteris virens* be a species or a variety; in either case a specimen would be acceptable. Again, it may be asked if *lonchititoides* is not a misprint of *lonchitidoides*; see p. 8.

DEATH OF DR. ANDREW SINCLAIR.

(*From the 'Lyttelton Times,' April 3, 1861.*)

Among all the records of accidental death which have darkened the columns of this journal almost without intermission since the foundation of the settlement, none can be found so lamentable as that which it is our painful duty now to register. News has reached town that Dr. Andrew Sinclair, who passed through Christchurch and Lyttelton but a few weeks ago, to assist Mr. Julius Haast in his exploration of the interior of this island, perished by drowning in the upper waters of that fatal Rangitata river, on Monday the 25th of March. An authentic account which we have received states that on the day mentioned the exploring-party were about to proceed to the sources of the eastern and middle branches of the Rangitata, having finished the survey of the western branch, when an accident rendered necessary the return of a man and horse to Mr. Butler's station (Mesopotamia); Dr. Sinclair determined to return with them, his object being to collate the large quantity of valuable specimens of botany he had collected, to complete various drawings, and to recruit his health, which had suffered from the hardships to which he had been exposed. Having one horse between them, Dr. Sinclair and the man who accompanied him, named Richard Stringer, adopted the plan, where the river-crossings were bad, of letting the horse take over one of them at a time, and sending him back for the other. At one spot, where the river divided, leaving an island in the middle, Dr. Sinclair went over first, selecting a not very favourable crossing. On reaching the island he endeavoured to send the horse back, but the animal refused to return, and set off by himself to cross the next stream towards Mr. Butler's station. Dr. Sinclair followed the horse into the second stream, which was fleet and broad, and Stringer, after watching him for some time, went down the bank a little to find a better crossing for himself. On reaching an elevated spot which commanded a complete view of that part of the river, Stringer turned round, and to his surprise failed to catch sight of his fellow-traveller. He at first paid little attention to the circumstance, thinking that Dr. Sinclair having crossed, was resting, or gone in search of the horse; but after watching for some time longer the painful reality began to force itself upon him, and he returned to the camp—not two miles distant—and related his sad story. Mr. Haast hurried to the spot, where on the following day he was joined by Mr. Butler and the rest of the party. About sundown on this day the body of the unfortunate gentleman was discovered, about three hundred yards below the place where he had crossed, in a position which gave every indication that he had left the water alive. The body was some yards from the stream, and the head was resting on the arm. No time was lost in conveying the remains to Mr. Butler's, where, a coffin having been prepared, the solemn ceremony of interment took place in a spot carefully selected and fenced round. A document was prepared and attested by those present, detailing the circumstances of his death, in precise language, in case legal investigation (which could not be had on the spot) were not required. We learn, however, that steps will be taken for securing the observance of the desirable forms of law.

Dr. Andrew Sinclair, whose untimely end we have thus recorded, has left a name and a character behind him to which we regret that we must fail to do justice. He was a surgeon in the Royal Navy, and had served with credit afloat, visiting almost every corner of the world in the course of his duty. His experience and his scientific attainments, especially as a botanist, brought him into communication with many leading men in the world of science at home, with several of whom he formed a lasting friendship. After leaving the regular service, his professional abilities secured him employment on several occasions as Surgeon-Superintendent of ships bringing convicts to the Australian colonies, in the performance of which most difficult duty he was eminently successful, and most so in the most trying of all, the charge of female convicts. In 1843 he came down to New Zealand on a botanizing tour, the second which he made to this country, and happened to be a fellow-traveller with Captain Fitzroy, then coming to Auckland to assume the duties of Governor of the colony. He landed at Auckland on the 23rd of December in that year, at a time when local party spirit ran high, and a difficult task was set before the new Governor to steer with safety between the contending political factions. It happened that, on the resignation of Mr. Willoughby Shortland, the task of appointing a Colonial Secretary devolved upon the Governor; and he, believing it to be utterly futile to name one of the local leaders of party, offered the appointment to Dr. Sinclair, who long refused it, though repeatedly pressed upon him. Alleging a consciousness of want of qualification for the post, he for some time resisted the Governor's entreaties, and at last only accepted office to relieve the Government of the Colony from embarrassment. As an official Dr. Sinclair worked hard and attended regularly to his duties; and though he has not left the reputation of ability as a secretary, there is no doubt that he rendered as valuable service as the system of government, which left the Governor all-powerful, and his highest subordinates but clerks, permitted any official to render. He held his office until the introduction of responsible government, within these last five years, released him, with a pension, from serving the colony in one way to benefit it in another way no less important.

Dr. Sinclair was the first collector of specimens of New Zealand natural history, in botany, conchology, and entomology. He sent home such a variety of plants, shells, and insects, as to induce Dr. Gray, of the British Museum, to commence the first scientifically arranged catalogue, which may be found appended to Dieffenbach's work on New Zealand. He was of late years again closely occupied by his botanical researches, and spent a large portion of his time in the investigation of the natural productions of this country. It was in the prosecution of his favourite pursuit that he fell a victim to the perils which beset the explorers of nature among our inhospitable Southern Alps. But the passion for science by no means closed the heart of Dr. Sinclair to human sympathies. If he earned a reputation at a distance as a natural historian, he was better known in his immediate neighbourhood as a true philanthropist. In 1843, 1844, and 1845, the population of Auckland underwent severe privations and distress, such as the settlers of this part of the colony have never known. Many an industrious and honest man received then at Dr. Sinclair's hands that assistance which he wanted to tide him over the crisis; and not a few prosperous men of the present day have reason, in recalling that time, to name him as the man who caused them to be what they are. Having no family of his own, his generosity also gathered round him relations not a few in number to share in the prosperity which he had earned, and late in life enjoyed in the neighbourhood of Auckland.

In private life Dr. Sinclair was a true Christian gentleman, liberal in the expression of opinions, pleasant and courteous in manner; as an official he was honest, upright, scrupulous, and laborious; as a man of science he was ardent but painstaking. The loss of one of his attainments and character, with the means and leisure which he possessed, is a public calamity; for there are few among us with his advantages, and fewer still who can use them as he did. His age we do not know; but though far from a young man, he had much of the vigour of youth still remaining, and might in all probability have enjoyed many years of life agreeably to himself, and usefully to his fellow-colonists, had not the melancholy accident which it has been our duty to narrate carried him off from the midst of his labours.

BOTANICAL NOTES, NOTICES, AND QUERIES.

How to destroy Cuscuta.

Another of man's enemies is said to lie at his mercy. *Cuscuta* is no longer to be dreaded; chemistry has done for her. What the first Darwin calls her "dangerous charms" have ceased to be dangerous; and the growers of Flax, Clover, and Lucerne may sleep in peace. A French chemist, M. Ponsard, having remarked that Cuscutas contain "an enormous quantity of tannic acid," bethought him of iron-salts as a fatal enemy, and called them to his aid. He mounted on wheels a barrel filled with water, and introduced into it as much green vitriol (sulphate of iron) as would saturate it; the proportion is immaterial, as water will only take up a fixed quantity. To his barrel he adapted a tap and india-rubber hose, with a nozzle. In the field he cut away most of the Cuscuta and Lucerne attacked by it, so as to lay the soil completely bare. The part mowed off was put in heaps and burnt, or else drenched with the sulphate of iron. The spaces whence the *Cuscuta* had been removed were also well watered to some distance all round, so as to be sure that every thread was reached. The effect was admirable; in an hour or two every morsel of *Cuscuta* was destroyed, or, more correctly speaking, "mineralized," and nothing remained but a heap of black threads twisted and entangled in all manner of ways. A tannate of iron had been formed inside her. As for the Lucerne, it is greedy of green vitriol, and pushed with the utmost vigour after the operation.

Helleborus viridis

Is undoubtedly wild in the locality mentioned in your number for July, vol. v. p. 221. It grows in straggling plants about the edges of the oak (unfenced) copses and hedge-sides, not near any garden or inhabited place or pleasure-grounds. I have lately been told by one who is able to distinguish it, that the green Hellebore occurs sparingly in Threapland Wood, and also in Plumbland Wood, both in this county.

The former place is a rugged ravine of natural copse, with beds of mountain limestone jutting out here and there, and is most unlikely to have had this or any other plant inserted, as the whole has been open to the pasturage of cattle, where practicable, as far back as memory serves. I am not aware of any other Cumbrian locality.

W. Dickinson.

Anemone ranunculoides.

I have collected the above-named plant at Scoulton, about five miles from Watton. In this locality it grows in a wood, on the right side of the road, next the turnpike, and close by the public-house. It also grows on the road to Thetford from the same place. This last station is now a meadow, but was *once* a wood as I have heard. In this place there is a pit, where edible frogs are said to be, but I never found any, though I have searched dilligently. But the plant is there, with many others, especially Orchids (*Listera ovata* for example), also some *Junci*, *Carices*, and Grasses.

W. Winter.

Pyrola rotundifolia.

In answer to the question in the April number of the 'Phytologist;'—in the Flora appended to Horsfield's 'History of Sussex,' Charlton Forest, near Chichester, is stated to be the habitat of the above-mentioned plant.

G. D.

Things not Generally Known.

As the pages of the 'Phytologist' often give its readers the derivation of the English names of British plants, I wish to call your attention to a note in 'Notes and Queries' respecting the derivation of our friend Jack-by-the-hedge, or Sauce-alone (*Alliaria officinalis*). As this note is incomprehensible to me, I give it verbatim, that *you* may see what is done, in other quarters by other periodicals, upon the subject of botany.

"*Sauce.*—Sarce, vegetables; Essex. (Halliwell's Dictionary.) This word is used in Norfolk and Suffolk, in the same sense as in Essex. Reading yesterday in Luther's Bible, Exodus xii. 8, I found the words "mit bittern Salsen," which our translation renders "with bitter herbs." Probably, then, the East-Anglian word is a remnant of the Saxon. I find in Flügel's Dictionary, part ii., Whittaker's edition, "Salse, f. (pl. n. sauce)." But in part i. (English-German) I do not find "sauce" translated "Salse." We have the word applied to one of the popular names of *Alliaria officinalis*, Jack-by-the-hedge, or Sauce-alone. May not Sauce-alone mean Sauce-à-lane, *i. e.* sauce (herb) a (at or by) lane?—G. E. Frere.

"*Roydon Hall, Diss.*"

S. Beisly.

More Materials for the Manufacture of Paper.

A Company has recently been formed with a view of obtaining cotton, flax, hemp, and jute from India, and also for the purpose of making use of certain fibres which it is expected will produce materials of great value to the silk, linen, mohair, and paper trades. The fibres have been sent to different manufacturers and subjected to their processes, and in all cases with satisfactory results. One house asked for 50,000 tons this year, and

100,000 tons for five succeeding years, and others for very large supplies. 40,000 acres of land had been offered to the Company in one part of India, and 15,000 acres in another part, and many thousand more could be obtained if the Indian Government would grant facilities. The principal fibres referred to are the Rheea of Assam (one of the strongest and best fibres known); the Neilgherry Nettle, the Aloe, the Pine-apple, and the Plantain. The most important is the Rheea, which can be grown to any extent, and imported into this country at highly remunerative prices. The Company propose to turn their attention in the first place more particularly to the Punjaub and north-western provinces of India for flax and hemp, and to Assam and the Sunderbunds for Rheea and Cotton. Mr. Ewart said the principal object of the deputation was to show Sir Charles Wood the fibres out of which paper could be made. Mr. Spensley then presented various portions of the Rheea fibre, both in its raw and manufactured state, and explained the mode adopted in preparing it. Various specimens of paper, lace, hemp, substitutes for horsehair, etc., were exhibited, and it was stated that if the fibre was operated upon while young, eighty per cent. of flax could be obtained.—*Times*.

CLAYTONIA ALSINOIDES.

This plant is perennial, and it is very hardy. It is now in blossom in a shady, cool part of my garden, where the same plant flowered last season (1860) from May to October. J. SIM.

NOTICE.

Mr. B. M. Watkins, of Glewstone, Ross, Herefordshire, hereby intimates that he did not undertake to supply applicants generally with fresh specimens of the Luzulas *L. Borreri*, *L. pilosa*, and *L. Forsteri*, because recent examples are not procurable at all seasons; but he suggests, that as fresh examples are more satisfactory than dried ones, botanists should avail themselves of the facilities afforded by the Post-office for their exchange. He will undertake to supply specimens in a recent state to those who wish to compare them, if early application is made, and the address of the botanist transmitted accompanied with a postage-stamp.

Communications have been received from

Archibald Jerdon; J. S. M.; W. Richardson, Jun.; Dr. Windsor; W. Pamplin; Miss E. Stackhouse; the Rev. Mr. Williams; F. Y. Brocas; W. P.; the Rev. R. H. Webb; John Sim; Ed. Lees, F.L.S.; Joseph Croucher; William Richardson; T. R. A. Briggs; C. J. Ashfield.

BOOKS, ETC., FOR REVIEW.

The Chemist and Druggist, July 15th.
The Alnwick Mercury, June 1st.
Berrow's Worcester Journal, July 20th.
Dundee, Perth, aud People's Journal, August 3rd.

ERRATUM.

In No. 74, N.S., for June, 1861, in list of plants near Ross, p. 189, for *Arabis verna* read *Draba verna*.

4 SE 61

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